

**Utility Advisory Commission Meeting**  
Agenda  
Thursday, June 2, 2016  
7:00 pm – Gardner City Hall Council Chambers

**CALL TO ORDER**

**PLEDGE OF ALLEGIANCE**

**PUBLIC COMMENT**

**CONSENT AGENDA**

1. Standing approval of the minutes as written for the April 7, 2016, meeting of the Utility Advisory Commission.

**NEW BUSINESS**

1. Consider a recommendation to the City Council to award a purchase contract for a portable PowerMaster 7 Three-Phase Meter Site Analyzer.
2. Consider a recommendation to the City Council to award an engineering service contract to replace the tone transmission line relaying from Substation #1 to Substation #2.

**DISCUSSION ITEMS**

1. Project Updates – Electric, Water and Wastewater.

**OTHER BUSINESS**

**ADJOURNMENT**

**UTILITY ADVISORY COMMISSION STAFF REPORT    CONSENT AGENDA ITEM # 1**  
**MEETING DATE:        JUNE 2, 2016**  
**STAFF CONTACT:       GONZ GARCIA, UTILITIES DIRECTOR**

---

**AGENDA ITEM:** Standing approval of the minutes as written for the April 7, 2016, meeting of the Utility Advisory Commission.

---

**Background:**

The draft minutes for the April 7, 2016, Utility Advisory Commission meeting are attached.

**Staff Recommendation:**

Staff recommends approval of the minutes for the April 7, 2016, meeting of the Utility Advisory Commission.

**Attachments:**

- a. Draft minutes of the Utility Advisory Commission meeting of April 7, 2016.

**RECORD OF PROCEEDINGS  
OF THE UTILITY ADVISORY COMMISSION  
GARDNER, KANSAS**

Page No. 2016-6

April 7, 2016

The Utility Advisory Commission of Gardner, Kansas, met in regular session on April 7, 2016, at City Hall. Present were Chairman Mark Baldwin, Commissioner Lance Boyd, Commissioner Duane Waldman, Commissioner Ryan Learned, Commissioner Clint Barney, Utilities Director Gonzalo Garcia, Sr. Electric Engineer Janis Krievins, Customer Service Manager Amy Foster, and Administrative Assistant Cindy Weeks. There were no members of the public in attendance.

**CALL TO ORDER**

There being a quorum of Utility Advisory Commissioners present, the meeting was called to order at 7:00 p.m. by Chairman Mark Baldwin.

**PLEDGE OF ALLEGIANCE**

Chairman Baldwin led the Pledge of Allegiance.

**PUBLIC COMMENT**

There were no public comments.

**CONSENT AGENDA**

1. **Standing approval of the minutes as written for the February 4, 2016, meeting of the Utility Advisory Commission.**

Motion by Commissioner Lance Boyd, seconded by Commissioner Clint Barney, to approve the Consent Agenda.

Motion carried 5-0 Aye

**NEW BUSINESS**

1. **Consider the appointment of City of Gardner representatives to the Kansas Municipal Energy Agency (KMEA) Board of Directors.**

Utilities Director Gonzalo Garcia gave the staff report.

Motion by Commissioner Boyd, seconded by Commissioner Duane Waldman, to forward a recommendation to the City Council to appoint Gonzalo Garcia, Utilities Department Director, as Director #2 with voting rights to the Kansas Municipal Energy Agency Board of Directors.

Motion carried 5-0 Aye

The commissioners discussed several possible choices for the Alternate Director position.

Motion by Commissioner Boyd, seconded by Commissioner Waldman, to forward a recommendation to the City Council to appoint Clint Barney, Utility Advisory Commission Member, as Alternate Director with voting rights to the Kansas Municipal Energy Agency Board of Directors.

Motion carried 5-0 Aye

2. **Consider a recommendation to the City Council to award a supply contract for the 161 kV breaker switch and stand.**

Sr. Electric Engineer Janis Krievins gave the staff report.

Chairman Baldwin asked why the breaker switch and stand failed. Engineer Krievins explained that the structure was leaning due to ground shifting, which caused the switch to bind up.

Director Garcia and Engineer Krievins explained the proposed new structure and switch designs.

Commissioner Barney asked why the original structure was so high and Engineer Krievins stated that it was to support the overhead transmission lines.

Motion by Commissioner Barney, seconded by Commissioner Ryan Learned, to forward a recommendation to the City Council to award a supply contract to KC Utility Packaging in the amount of \$25,649.31 for a new 161 kV switch and support stand.

Motion carried 5-0 Aye

**3. Consider a recommendation to the City Council to award an installation and service contract for the 161 kV breaker switch and stand.**

Engineer Janis Krievins gave the staff report.

Chairman Baldwin asked if the new structures would require concrete work. Engineer Krievins said that the project would require two foundations to support the stand. He added that Capital Electric did not want to do the concrete work, so he would use Holiday Construction company, who has done previous satisfactory work for the City.

Commissioner Barney asked when the project would start. Engineer Krievins stated that the switch was expected to arrive next week.

Motion by Commissioner Boyd, seconded by Commissioner Waldman, to forward a recommendation to the City Council to award a service contract to Capital Electric Line Builders, Inc., in the amount of \$38,900.00 to remove the 161 kV switch, install a new 161 kV breaker, and inspect and lubricate the other three existing 161 kV switches.

Motion carried 5-0 Aye

**DISCUSSION ITEMS**

**1. Utility Billing Rates and Averages.**

Customer Service Manager Amy Foster gave a presentation on the Utility Billing Process and on Utility Billing Rates called Utility Billing 101. The presentation information included the Utility Billing Division structure, duties, and process; utility bill estimations and calculations; and water and wastewater billing rates.

The commission thanked Manager Foster for her thorough and highly informative presentation.

**2. 2016 1<sup>st</sup> Quarter Outages Report.**

Director Garcia presented the 2016 1<sup>st</sup> Quarter Electric Outages Report.

Director Garcia and the commissioners discussed the outage cause designator titled "other". They agreed that it could be confusing and misleading when comparing data, and suggested that outages caused by other people should not be included in the report. The commissioners agreed that Director Garcia should determine how to structure the report to provide pertinent, necessary, and comparable statistics.

**RECORD OF PROCEEDINGS  
OF THE ELECTRIC UTILITY BOARD  
GARDNER, KANSAS**

Page No. 2016-8

April 7, 2016

**3. Project Updates – Electric, Water, and Wastewater.**

Director Garcia gave project updates:

- The KCWRRF gearboxes have been received; one rotor is back in service; and the second rotor has been reassembled and is ready to reinstall.
- The Electric Distribution N. Center Street Overhead Line Upgrade project will be completed next week.
- The Nottingham Village apartments are nearing completion and the power is being installed and the meters set.

Engineer Krievins gave project updates for electric generation and substations:

- Two 12.47 kV circuit breakers are being installed in Substation #1.
- The 161 kV circuit breaker will be delivered next week.
- The T-1 transformer has been tested and is being shipped, it should arrive by mid May. The G60 project is moving well along and the vibration system project and the panels in the Substation are also almost completed.

**OTHER BUSINESS**

Director Garcia led a discussion about the 15% markup for fuel and materials that is included in all invoices sent out for City electric, water, and sewer facility damages and electric installations. He asked what those charges were for and if they should be continued. The commissioners did not know when or why those charges were instituted and agreed that those charges should probably be dropped. The commission requested Director Garcia to use his best judgment to decide whether to drop those charges or continue them, and he agreed the charges should be discontinued.

Director Garcia led a discussion about the disparity between the \$350 temporary electric meter charge set by the adopted Electric Standards and the document utilized by the Building Permits division to charge only \$50 for temporary electric meters. He asked if any of the commissioners knew why or when those fees were changed. The commissioners did not have information about the temporary electric charges and suggested that the issue should be considered during the upcoming rate study. They requested to revisit the issue after Director Garcia has had time to determine a recommendation.

**ADJOURNMENT**

Motion by Commissioner Boyd, seconded by Commissioner Barney, to adjourn the meeting at 9:05 p.m.

Motion carried 5-0 Aye

/s/ Cindy Weeks

---

Cindy Weeks, Administrative Assistant

**UTILITY ADVISORY COMMISSION STAFF REPORT      NEW BUSINESS ITEM #1**  
**MEETING DATE:      JUNE 2, 2016**  
**STAFF CONTACT:      GONZ GARCIA, UTILITIES DIRECTOR**  
**BRUCE BALDWIN, ELECTRIC DISTRIBUTION MANAGER**

---

**AGENDA ITEM:**      Consider a recommendation to the City Council to award a purchase contract for a Portable PowerMaster 7 Three-Phase Meter Site Analyzer.

---

**Background:**

The meter tester is used to verify meter accuracy for commercial and residential customers. It is a stationary meter tester, not designed to be transported in the van to the meter sites in the field to test meters. All meters requiring testing have to be removed from service and tested in the meter room at the distribution building. The meter tester is 12 years old and behind current technology. Purchasing the Powermetrix PowerMaster 7 field testing device would eliminate driving to the tested meter sight twice and the temporary outage for the customer.

The PowerMaster 7 device would also reduce testing time and provide more complete testing of the entire meter installation at the customer site, which would include testing the meter under customer load. In addition, the device would perform current transformer and demand testing for commercial customers without having to remove the meter from its socket.

The PowerMaster 7 is completely database driven and designed with user-friendly screens that lead the user through installation, wire checks, testing and record keeping.

The 2016 Electric Budget includes \$75,000 for a new meter tester.

Staff researched potential suppliers and found that only two companies provide portable meter testers. We received quotes from those two vendors:

<b>VENDOR</b>	<b>QUOTE</b>
Powermetrix	\$57,933.75
Radian Research, Inc.	\$63,815.00

**Staff Recommendation:**

Approve a recommendation to the City Council to award a purchase contract to Powermetrix in the amount of \$57,933.75 for a Portable PowerMaster 7 Three-Phase Meter Site Analyzer.

**Attachments:**

- a. Quote from Powermetrix
- b. Quote from Radian Research
- c. Photos of Testers`



Technology for Energy Corporation  
Powermetrix Division  
10737 Lexington Drive  
Knoxville, TN 37932-3294  
TEC Main: 865-966-5856

## QUOTATION

Quote No.: 20042  
Issued Date: 04/06/2016  
Cust No.: L27311  
Cust Ref. No.:  
Page: 1 of 3

**B** Gardner Energy  
**I** 1150 E Santa Fe  
**L** Gardner KS 66030  
**L**

**S** Gardner Energy  
**H** 1150 E Santa Fe  
**I** Gardner KS 66030  
**P**

**T**  
**O**

**T**  
**O**

Sales Employee: John Carroll

Ship Via:

Terms: - Cash Basic -

Contact Name: Bruce Baldwin

Cust Shipping #:

Valid Until: 5/6/2016 12:00:00AM

Phone No.:

FOB: Source

Item	Description	QTY	Disc %	Unit Price	Ext Price
1	10-130-7335	1.00	0.00	\$36,995.00	\$36,995.00
	PowerMaster 7335 - 3-Phase Metering Site Analyzer				
	Features				
	True 3 Phase Reference Standard (0.02%)				
	True 3 Phase Current Source (0.1-50A Per Phase)				
	True 3 Phase Voltage Source (30-480V Per Phase)				
	Customer Load Meter Testing				
	Customer Load Demand Testing				
	True 3-Phase CT & PT Testing				
	Data Trending				
	CT Demagnetization				
	Transducer Testing				
	Calibration Verification				
	Meter Site Manager Software				
	5 Year Contingent Warranty				
	Included Accessories				
	True 3-Phase Test Switch Direct Current Probes (0.1-20A, 600V) (10-340-0037)				
	True 3-Phase Voltage Cable (10-600V) (10-340-0006)				
	True 3-Phase Probe Adapter Cable (10-340-0014)				
	IR Pulse Detector with Flexible Arm Mount (10-100-3327)				
	USB Communication Cable (75-800-4005)				
	Auxiliary Power AC Adapter (10-340-0045)				
	Soft Accessory Case (75-900-7301)				
	CT Jumper Leads ( 4 of 10-340-0133)				
	User Manual (10-300-7300)				
2	10-130-0016	1.00	0.00	\$5,000.00	\$5,000.00
	MTA15Z Universal Meter Socket Adapter				
3	Z-CT-TESTING-50A	1.00	0.00	\$2,265.00	\$2,265.00
	Dead Site CT Testing Kit (50A)				
4	10-140-8016	1.00	0.00	\$4,115.00	\$4,115.00
	High Voltage Amp Litewire Probe (4 x 6 inch window)				
5	10-140-1036	3.00	0.00	\$980.00	\$2,940.00
	Flexible Current Probe 36" (11.5 diameter) (1000A, 600V max)				
6	10-140-0600	1.00	0.00	\$1,955.00	\$1,955.00
	VP600 3-Phase Voltage Probe 600 Volt for 7 Series				
7	ED-5YR-RECAL-7335	1.00	25.00	\$5,665.00	\$4,248.75
	Five Year Annual Calibration Package 7335				
8	10-340-0154	1.00	0.00	\$50.00	\$50.00
	5" CLIP VOLTAGE JUMPER RED				
9	10-340-0152	1.00	0.00	\$50.00	\$50.00
	5" CLIP VOLTAGE JUMPER YEL				
10	10-340-0155	1.00	0.00	\$50.00	\$50.00
	5" CLIP VOLTAGE JUMPER BLUE				

**QUOTATION**

Cust Ref. No.:

Issued Date: 04/06/2016

Cust No.: L27311

Page 2 of 3

Quote No.: 20042

Item	Description	QTY	Disc %	Unit Price	Ext Price
11	10-340-0157	1.00	0.00	\$50.00	\$50.00
	5" CLIP VOLTAGE JUMPER WHT				
12	10-340-0156	1.00	0.00	\$50.00	\$50.00
	5" CLIP VOLTAGE JUMPER GRN				

Subtotal \$57,768.75  
Discount % 0.00 \$0.00  
Freight \$165.00  
Rounding \$0.00

**Total Order Value in USD \$57,933.75**

TEC Powermetrix Division warrants its products herein specified for a period of five (5) years for the PowerMaster 7 Series and 83xx Series, two (2) years for the PowerMaster 4 Series and 5 Series, and one (1) year for the PowerMaster 3 Series and Model 890x Automated Calibration System. Warranty is dependent on the product returning to the factory once per year for annual calibration and preventive maintenance check (fee incurred). Such products consist of everything designed and manufactured by Powermetrix. All accessories and probe sets not manufactured by Powermetrix come with a one (1) year warranty from delivery for any part that fails during normal operation. This warranty covers defects in material and workmanship. Servicing will be handled from the factory in Knoxville, TN. Defective units should be returned to TEC Powermetrix Division after calling to obtain an RMA number. All shipping costs are the responsibility of the customer. Note that there are no user-serviceable parts in the unit.

A 1.5% per month charge will be added to unpaid balances after the payment terms period. Delivery lead time will be 6 weeks ARO. Shipping is prepaid and added FOB Knoxville. Powermetrix will review pricing annually and reserves the right to change prices at any time. During the warranty period, any firmware upgrades will be provided free of charge. Shipping charges for the firmware upgrade and warranty are the responsibility of the customer.

FOB Shipping Point.

TEC accepts MasterCard, Visa, American Express or Discover credit cards.

TEC certifies that these goods were produced in compliance with all applicable requirements of Section 6, 7, and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under section 14 thereof.

Items to be Returned will not be accepted without proper customer return material authorization (RMA) Number.

TEC Reserves the right to charge a restocking fee on any non-warranty return. Note: Return of items produced under TEC's Nuclear Qualification Program are not permitted for non-warranty issues.

It is understood, that all property sold under these terms and conditions remain the property of TEC until paid in full. TEC reserves the right to recall such unpaid property at anytime the purchaser is found to be noncompliant with these terms of sale.

The parties hereby incorporate the requirements of 41 C.F.R. § 60-1.4(a) and 29 C.F.R. § 471, Appendix A to Subpart A, if applicable.

This contractor and subcontractor shall abide by the requirements of 41 CFR 60-300.5(a) and 41 CFR 60-741.5(a), if applicable. These regulations prohibit discrimination against qualified protected veterans and qualified individuals with disabilities, and require affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified protected veterans and qualified individuals with disabilities.

Respectfully,  
John Carroll  
Regional Solutions Specialist  
Email: john.carroll@powermetrix.com  
Direct: (865) 218-5802  
Mobile: (865) 566-1625



Cust Ref. No.:

Issued Date: 04/06/2016

Cust No.: L27311

Page 3 of 3

Quote No.: 20042

Item	Description	QTY	Disc %	Unit Price	Ext Price
------	-------------	-----	--------	------------	-----------

**Technology for Energy Corporation**

10737 Lexington Drive

Knoxville, TN 37932

Federal I.D. #: 62-0937255

**Customer Set-up/Change Form**

Customer Legal Name:			
Street Address:			
City:	State:	Zip Code:	
Country:	Phone Number: (     )		
Federal ID#::			

**Ship To Account**

Name:			
Street Address:			
City:	State:	Zip Code:	
Country:	Phone Number: (     )		
Fax Number: (     )			
FOB: <input type="checkbox"/> Source <input type="checkbox"/> Destination	Shipping Type (if collect account please provide account number)		

**Include a Tax Exemption Certificate if applicable**

**Bill To Account**

Name:			
Street Address or P.O. Box:			
City:	State:	Zip Code:	
Country:	Phone Number: (     )		
Fax Number: (     )			
Email Address:			
Vendor # assigned to TEC by your system:			
Statement	<input type="checkbox"/> Mailed	<input type="checkbox"/> Emailed	Email Address:

**Other Contact Information**

Name	Phone Number	Email	Address	Other Information

Documentation to be attached:

W9

Sales Tax Exemption Letter (if applicable)

TEC Credit Form (if applicable)



**Power and Energy Measurement Solutions**

Please make Purchase Orders to:  
Watthour Engineering Inc.

## QUOTE

Date	Quote #
04/28/16	MRLSQ4411-02

3852 Fortune Drive - Lafayette In 47905  
Phone: 765-449-5500 - Fax: 765-448-4614  
Email: marcus@radianresearch.com

**Sold To:** City of Gardner  
Bruce Baldwin  
1115 Santa Fee  
Gardner, KS 66030  
USA  
**Phone:** (913) 856-7256  
**Fax:**

**Ship To:** City of Gardner  
Bruce Baldwin  
1115 Santa Fee  
Gardner, KS 66030  
USA  
**Phone:** (913) 856-7256  
**Fax:**

Thank you for your interest in Radian Research products. Following is a price quotation including payment and shipping terms for the product(s) you inquired about:

Terms	Quoted By	Ship Via	Days Valid	Lead Time	Local Rep
NET30	Marcus	To Be Determined - Pearl, MS	30	6-8 Weeks	RADIAN

Ln #	Qty	Part#	Description	Unit Price	Ext. Price
1	0		<b>When ordering the items below, please issue purchase order to: WECO 333 Crosspark Dr. Pearl, MS 39208</b>		
2	1	RW-31	RW-31 Portable Three-Phase Meter Site Analyzer RD-31-x (Accuracy 0.02%) three-phase portable standard. (2 Year Warranty)	\$38,890.00	\$38,890.00
3	1	BW015701	RW-3X Basic Cable Set is included with the RW at no charge. This cable set includes: Analog Sense, External Cable Assembly Field Power Cable Shop Power Cord Potential Cable Assembly Set, 2mm Plugs, Right Angle Current Cables with Safe-T-Plugs, right angle Current Cables with Alligator Clips, right angle Ethernet Cross-Over Cable Includes nylon carrying case for cables and leads.	\$0.00	\$0.00
4	1	AW0005XX	RW-31 OPTOCOM, Optics Option Kit	\$525.00	\$525.00
5	1	AC0015XX	RW-31 Magnetic Mount Optics Kit	\$775.00	\$775.00
6	1	AW0026XX	RW-31 AmpFlex Current Probe Kit, 36" 3000 Amps, 1000 Volts	\$1,800.00	\$1,800.00
7	1	AW0011XX	RW-31 High Voltage Current Probe Kit, 2000 Amps, 150kv	\$4,050.00	\$4,050.00
8	1	3230	Model 3230 Three Phase Smart Shop Stand for use with WE-20, WE-30, RW-30 and RW-31. Features built-in laser optics, Smart Socket™ technology and automatic meter form selection.	\$8,975.00	\$8,975.00
9	1		+3 Year Warranty	\$8,800.00	\$8,800.00
10	1	SW101413		\$5,000.00	\$5,000.00



Please make Purchase Orders to:  
Watthour Engineering Inc.

## QUOTE

Date	Quote #
04/28/16	MRLSQ4411-02

3852 Fortune Drive - Lafayette In 47905  
Phone: 765-449-5500 - Fax: 765-448-4614  
Email: marcus@radianresearch.com

Ln #	Qty	Part#	Description	Unit Price	Ext. Price
			Watt-Net Express Data Management Software		
11	0		100.0% Promotional Discount		-\$5,000.00
12	1	SW101414	Watt-Net Express Data Management Software Annual Support and Maintenance. (must register on-line for automated renewal notification).	\$1,000.00	\$1,000.00
13	0		100.0% Promotional Discount (applies to first year support and maintenance only)		-\$1,000.00
14	0		SubTotal		\$63,815.00
15	0				
16	0		Yearly Calibration Cost (Optional)	\$950.00	\$950.00
				Total	\$63,815.00
				Sales Tax	\$0.00
				Shipping	Pre-paid & Added
				<b>Grand Total</b>	<b>\$63,815.00</b>

\*Prices quoted do not include shipping. Shipping will be pre-paid and added to the invoice unless the purchase order provides alternate shipping instructions.

## **Warranty and Terms of Sale Policy**

All Purchase Orders must be addressed to WECO and payments must come directly to WECO.

All prices are F.O.B. Pearl, Mississippi unless otherwise stated on the quotation. Shipping, handling, and insurance charges will be prepaid and added to invoice.

All prices are for 1 unit.

All prices are in U.S. Dollars.

All orders are subject to a 15% cancellation charge if canceled after five (5) business days from the order acknowledgment date.

All prices are subject to change without notice.

All sales are final after 30 days of shipment.

### ***Restocking Charges***

30% of order on standard catalog items. Consult factory on special items.

### ***Minimum Order***

Purchase Order \$150.00. MasterCard or Visa Card \$25.00

### ***Warranty***

Watthour Engineering Co., Inc. warrants its products herein specified for a period of two (2) years from the delivery for replacement of any part\* that fails during normal operation. Defective parts should be returned to Watthour Engineering Co., Inc. This warranty covers defects in material and workmanship.

\*Computers carry a manufacturer's warranty. Bar code reader carries a ninety (90) day warranty.

### ***Service***

All required service on WECO products herein specified will be handled from the Watthour Engineering Company office located in Pearl, Mississippi. Should a problem arise, it can be handled in most cases over the telephone without necessitating a return for service. Watthour Engineering Co., Inc. maintains a stock of all components and should a part fail, would in most cases be able to provide a replacement part within 72 hours.

## CURRENT METER TESTER



## POWERMETRIX POWERMASTER 7 THREE-PHASE METER SITE ANALYZER



Home Applications Customers Products About Us Support News Calendar Contact Us

### 7 SERIES



#### 7 Series Innovation

The innovative design of the 7 Series allows utilities to fully test a metering installation with one piece of equipment. Customer load meter testing, phantom load meter testing, CT burden and ratio testing, CT de-magnetization, PT ratio testing, and transducer testing can all be performed with one solution. In addition, vector diagrams, voltage and current waveforms, and harmonics data up to the 100th harmonic can all be analyzed to complete a true wiring verification.

The 7 Series features the largest transfective color screen in the industry, field rugged multi-pin connectors, and is protected with a built-in Pelican hard case. It is the most compact and lightweight product in its class and has a 5 year warranty. Request a demonstration and personally see why this analyzer is the overwhelming preferred choice for field testing.

#### FEATURES

#### SPECIFICATIONS

#### APPLICATIONS

#### ACCESSORIES

- $\pm 0.02\%$  Accuracy Class
- True Three Phase Analyzing Reference Standard
- Optional Three Phase Current & Voltage Source
- Customer Load & Phantom Load Meter Testing
- Demand Testing (with End-To-End Testing)
- Three Phase CT Testing
- Three Phase PT Testing
- CT "Dead Site" Testing
- CT Demagnetization
- Transducer Testing
- 5 Year Warranty

## **UTILITY ADVISORY COMMISSION STAFF REPORT      NEW BUSINESS ITEM #2**

**MEETING DATE:      JUNE 2, 2016**

**STAFF CONTACT:      GONZALO GARCIA, UTILITIES DIRECTOR  
                                 JANIS KRIEVINS, SR. ELECTRICAL ENGINEER**

---

**AGENDA ITEM:**      Consider a recommendation to the City Council to award an engineering service contract to replace the tone transmission line relaying from Substation #1 to Substation #2.

---

### **Background:**

The current tone transmission line relaying between the KCP&L Moonlight Substation and Substation No. 2 is not operable and is out of service. After evaluation, KCP&L and staff propose that this relaying be replaced with transmission line differential relaying using existing fiber from Substation #1 to Substation #2.

Staff has received proposals from Sega, Kiewit and Lutz, Daily and Brain:

Kiewit	\$37,997.00
Lutz, Daily, & Brain	\$50,800.00
Sega	\$90,000.00

Kiewit has previously performed major work on our substations and transmission lines with acceptable results.

### **Staff Recommendation:**

Approve a recommendation to the City Council to award an engineering contract to replace the transmission line relays from Substation #1 to Substation #2 to Kiewit in the amount of \$37,997.00.

### **Attachments:**

- a. Proposal from Kiewit
- b. Proposal from Lutz, Daily & Brain
- c. Proposal from Sega

May 16, 2016

Mr. John Krievins  
Gardner Energy Center  
1150 East Santa Fe  
Gardner, KS 66030

Reference: Panel Replacement

Mr. Krievins,

Kiewit Engineering and Design Co. (Kiewit) is pleased to present our proposal for the relay panel replacement located at Substations #1 and #2. Kiewit has successfully worked with City of Gardner on the Transformer Replacement project, so we understand Gardner Energy Center's (GEC) priorities, design criteria, specific processes, and commercial terms. We look forward to the opportunity to continue this relationship and demonstrate our commitment to excellence.

For this project, we will provide engineering and procurement to replace the relay panel at Substation #1 and install a new relay panel at Substation #2. Kiewit intends to complete the engineering and procurement of equipment to help reduce the risk and uncertainty of the panel installation. Our full scope of work and our complete list of deliverables are defined in the sections below. City of Gardner will coordinate the removal of the existing panel at Moonlight substation. All work located at the Moonlight substation is outside the scope of these services.

Beyond our experience with City of Gardner, Kiewit has previously completed numerous relay panel replacements and is very familiar with the requirements to successfully design, specify, procure the required materials, and issue a comprehensive design package for field installation. As an example, for Solaris Power in Kansas, Kiewit revised existing panel fronts, schematics, and wiring diagrams; replaced the existing line distance relays with current differential relays; and upgraded the existing communications processor. City of Gardner can have confidence the local, readily-available electrical system engineers assigned to this project will be well-qualified to lead the project successful completion on-time and within budget.

## SCOPE OF WORK

For the line position connecting Substation #1 and #2, the existing "tone" differential relays will be replaced with an SEL current differential relay. A relay panel will be replaced at Substation #1. It is assumed the existing cables will be adequate for the new SEL panel at Substation #1. A matching relay panel will be installed at Substation #2. The City of Gardner is responsible for the fiber optic cables from Moonlight substations to the panel location inside Substation #2. Kiewit and the City of Gardner will mutually agree upon an acceptable date and duration for installation of the panels. Kiewit proposes to ship the panels to the City of Gardner storeroom. The lead time for relay panels has been quoted at 13 weeks.

Engineering deliverables for the above scope of work include the following:

- Edit and update existing one-line and three-line diagrams



- Edit and update existing schematic diagrams
- Edit and update existing panel front diagrams
- Edit and update existing wiring diagrams
- Edit and update existing control room layout drawings
- Create demo drawings for removal of Substation #1 tone panel
- Create communication diagram for fiber optic connections
- Develop line relay settings for the SEL line relay

Procurement project scope of work includes the purchasing of materials required to support the specifications provided by City of Gardner for bidding. The quoted bill of materials has twenty four line items, below is a high level list:

- Relay panel quote for two (2) 24" X 30" closed cubicle panels including ground
- SEL - 421 protection automation and control system
- SEL - 311L current differential relay and backup
- SEL - 2829 fiber optic transceiver
- Indication lamp, appropriate colors
- Fuse block, fuses
- Panel wiring diagrams

## ADDITIONAL REQUIRED INFORMATION

This proposal is based upon GEC providing the following items for Kiewit's use during the project:

- Latest City of Gardner engineering standards, CAD standards and title blocks
- Native format CAD files of existing project drawings for modification
- All applicable vendor drawings

## ENGINEERING AND PROCUREMENT FEE

Kiewit proposes to perform the above scope of work on a lump sum basis, as follows:

Engineering:	\$37,997
Two (2) Relay Panels:	<u>\$61,432</u>
Total:	\$99,429

## PRELIMINARY SCHEDULE

Kiewit estimates a total duration of twenty weeks from project kickoff to project completion. A mutually agreed time for construction will be determined in order to minimize any substation outages or disruptions. This preliminary schedule assumes that all vendor drawings are readily available and is based upon the following general milestones:

- Generation of Approval Drawings                      8 Weeks



- GEC Review of Approval Drawings 2 Weeks
- Procurement of Materials 5 Weeks
- Generation of Construction Drawings 1 Week

Upon project approval, a fully detailed project schedule will be developed and submitted.

## TERMS AND CLARIFICATIONS

### Engineering:

- No engineering provided for the work at Moonlight Substation.
- This proposal is based on performing work within the respective relay control houses only; removal or design of external below or above grade equipment is not included.
- This proposal is based upon the re-use of the existing cable at Substation #1. It is also based upon the correct cables being in position for the installation of the relay panel box at Substation #2.
- This proposal is based on modification of the existing protection schemes to accommodate the new relays. Engineering for a complete redesign of the protection schemes due to new customer standards or desired changes in the existing schemes is not included.
- This proposal is based on the re-use of the existing ground grid. All newly installed equipment will be connected to the existing ground grid, and all replaced ground connections will include only connections from the ground grid to the apparatus. No engineering or design work is included for the analysis, modification or replacement of the existing ground grid.
- This scope assumes that the design package(s) will be issued once to GEC for review, that GEC will provide comments on the design package(s) within ten business days, and that the design package(s) will be issued for construction once the GEC comments are incorporated.
- Two engineering site visits for design support are included in this proposal.
- Four (4) hours of construction support is included in this proposal, but it is assumed that the majority of this support will be provided via email or phone. Proximity to the construction site will enable site visits during construction.

### Commercial:

- Terms and conditions will be mutually agreed upon at the time of award.
- Taxes (federal, state, local and any other taxes) are not included in the proposal pricing.

## BID VALIDITY

This proposal is valid for 90 days from the issue date.

We look forward to continuing our relationship with GEC after the successful completion of the Transformer Replacement project. We believe our local presence, familiarity with GEC's design standards, and substantial experience with relay panels demonstrates our ability to provide the best value services that meet or exceed your expectations. We look forward to discussing our proposal with GEC in further detail. Should you have any questions, please do not hesitate to contact me at [scott.benortham@kiewit.com](mailto:scott.benortham@kiewit.com) or 913-689-4421.

Best regards,

Scott Benortham, P.E.  
Project Manager  
Kiewit Engineering & Design Co.



**LUTZ, DAILY & BRAIN, LLC** CONSULTING ENGINEERS  
CLOVERLEAF 4 BLDG., 6400 GLENWOOD, OVERLAND PARK, KANSAS 66202  
TELEPHONE 913•831-0833 FAX 913•831-1569 E-MAIL ldb@gvi.net

May 25, 2016

Mr. Janis Krievins  
Electrical Engineer  
City of Gardner  
1150 E. Santa Fe St.  
Gardner Kansas, 66030

RE: City of Gardner 161KV Line Relay Protection Upgrade

Dear Mr. Krievins:

Per your request, we are pleased to provide our proposal to upgrade the existing 161KV protective relays for the line between Substation 1 and 2. Our proposal includes the following:

1. Develop project cost and schedule
2. Moonlight-Develop revised single line diagram
3. Moonlight-Develop revised 3 line diagram
4. Moonlight-Develop revised DC Schematic diagram
5. Moonlight-Develop revised Panel Wiring diagram
6. Moonlight-Develop revised circuit schedule
7. Substation 1-Develop revised single line diagram
8. Substation 1-Develop revised 3 line diagram
9. Substation 1-Develop revised DC Schematic diagram
10. Substation 1-Develop revised Panel Wiring diagram
11. Substation 1-Develop revised circuit schedule
12. Prepare panel layout drawing
13. Provide panel drawings to panel builder
14. Prepare relay settings for SEL-311L and SEL-421 (Jerry)
15. Re-work after drawings released
16. Interface with KCPL
17. Review vendor submittals
18. Construction Support

Gardner would be responsible for providing full-size hardcopies or scans of the existing drawings. Gardner would be responsible for installing the new equipment, wiring the new relays, and performing functional testing. Secondary injection relay testing and CT polarity checking by a 3<sup>rd</sup> party tester is recommended.

Please note that we are recommending the installation of a new panel at Substation 1 rather than installing the relays in the existing panel. We believe that there would be more cost to rework the existing panel than to install a new panel.

**LUTZ, DAILY & BRAIN, LLC**  
**Consulting Engineers**

We propose for the 161KV Protective Relay Upgrade, an amount of \$50,800 for the tasks listed above.

If you find this proposal to be acceptable, please sign below and return to LD&B.

Very truly yours,

LUTZ, DAILY & BRAIN, LLC

A handwritten signature in black ink, appearing to read "B. D. Smith", with a stylized flourish at the end.

Bruce D. Smith

---

By

---

Date

**Cost Summary**

**I. ESTIMATED LABOR**

	<u>Hours</u>	<u>Hourly Rate</u>	<u>Dollars</u>	
Member (M)	-	\$ 285	\$ -	
Principal Engineer (PE)	126	228	28,728	
Senior Design Engineer (SDE)	86	181	15,566	
Design Engineer (DE)	-	131	-	
Engineering Technician (ET)	-	122	-	
Administrative Assistant (AA)	25	74	1,850	
Subtotal	<u>237</u>			\$ 46,144

**II. ESTIMATED EXPENSES**

	<u>No. of Units</u>	<u>Cost per Unit</u>	<u>Dollars</u>	
A. Travel Expenses:				
Airfare	-	300	-	
Per Diem	-	40	-	
Rental Car	-	90	-	
Airport Parking	-	7	-	
Mileage	-	0.57	-	
B. Reproduction Expenses:				
8.5"x11" Copies, Black & White	-	0.25	-	
8.5"x11" Color Printing	-	2.54	-	
11x17" Color Printing	-	5.08	-	
Prints	-	5.58	-	
C. CAD	-	28.00	-	
D. Misc.	-	100	-	
Subtotal				\$ -

**III. SUBTOTAL LABOR & EXPENSES** **\$ 46,144**

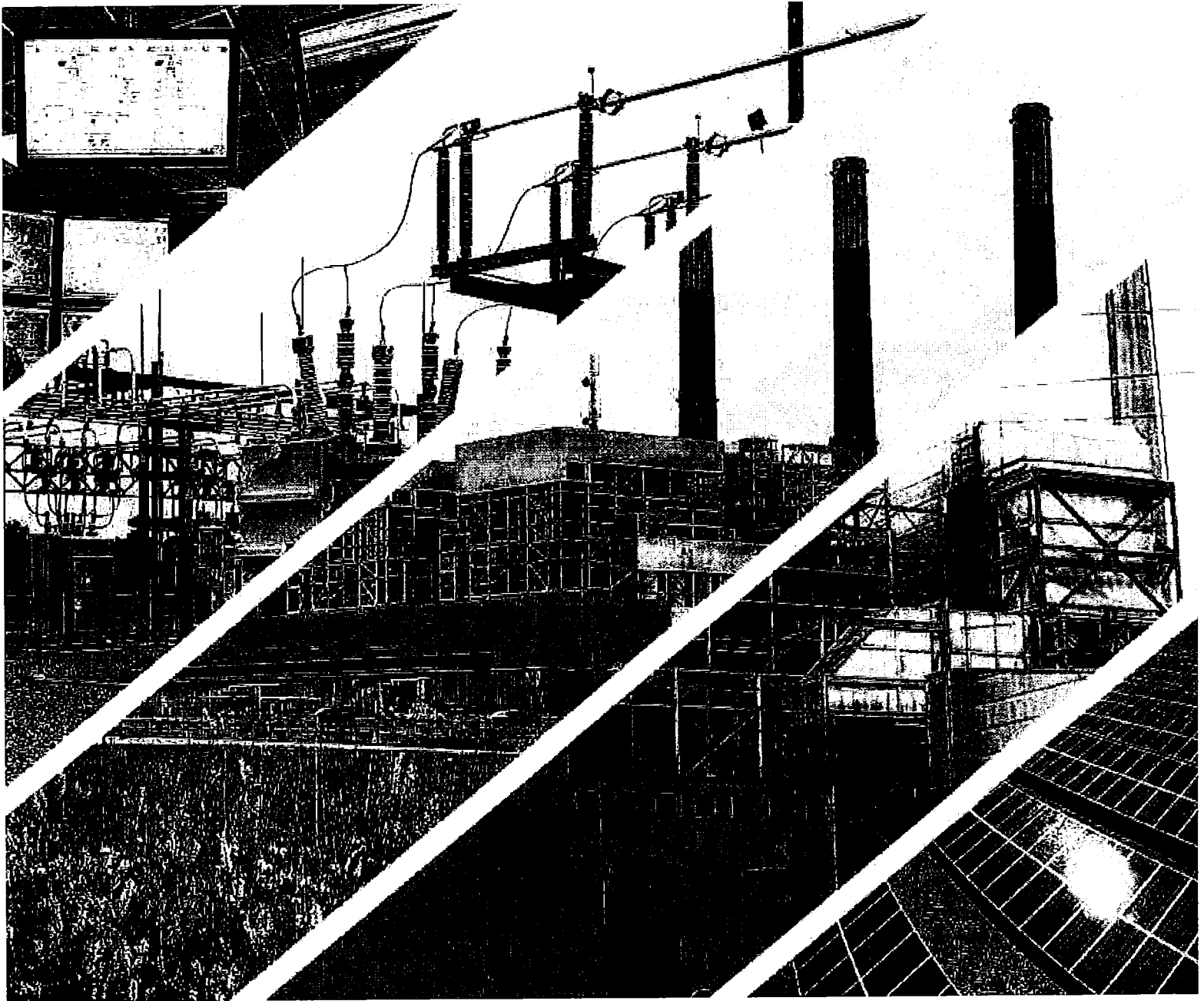
**IV. PROJECT MANAGEMENT & COORDINATION (10%)** **4,614**

**V. TOTAL ESTIMATED COST (rounded to nearest \$100)** **\$ 50,800**

# City of Gardner, Kansas

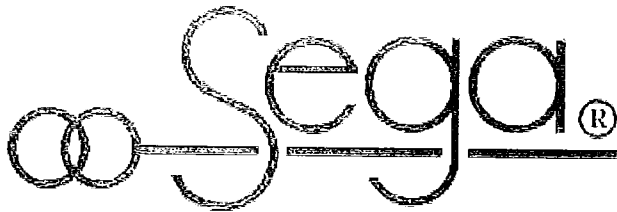
## Proposal for Engineering Services

### 161-kV Line Protection at Substation No. 1 and No. 2



Proposal No. 352Q-16183  
May 4, 2016





THE DESIGN BEHIND POWER  
ENGINEERING & TECHNICAL SERVICES

---

May 4, 2016

City of Gardner, Kansas  
Electrical Department  
1150 East Santa Fe  
Gardner, KS 6630

**Attention: Mr. John Krievins**

Re: City of Gardner, Kansas  
Engineering Support Services  
161-kV Line Protection at Substation No. 1 and No. 2  
Proposal No. 352Q-16183

**SUBJECT: PROPOSAL FOR ENGINEERING SERVICES**

Dear Mr. Krievins:

Sega Inc. (Sega) is pleased to submit this proposal for engineering support services for Gardner Energy based on your April 22, 2016 and May 2, 2016 phone calls with Ben Loehr and our previous discussions.

### **PROJECT DESCRIPTION**

The City of Gardner plan to replace several electromechanical relays for the 161-kV transmission line to the Moonlight Substation and bus differential protection in Substation No. 1. They are also adding a new relay panel at Substation No. 2 to provide relay protection for the 161-kV line from the Moonlight Substation to Substation No. 1.

### **SCOPE OF SERVICES**

Gardner requires the engineering services for the following tasks to complete the Substation No. 1 relay replacements and relay addition to Substation No. 2. The following scope items are included in this proposal:

#### **Substation No. 1**

1. Provide engineering services to replace the 161-kV existing line electromechanical relays and 161-kV bus differential relays. The line electromechanical relays will be replaced with a SEL 311L and SEL 421 for primary and back-up protection. The bus differential electromechanical relay will be replaced with a SEL 387.
2. Develop a revised panel layout drawing for the City of Gardner to fabricate and mount the new relays.
3. Revise existing AC and DC schematics for the new relays being added.

Sega Inc.  
100% Employee Owned

16041 Foster, P.O. Box 1000  
Overland Park, Kansas 66085-1000  
[www.segainc.com](http://www.segainc.com)

Phone 913-681-2881  
Fax 913-681-8475

4. Develop a revised relay panel wiring diagram for the new relays and revise the existing relay panel wiring diagrams.
5. Develop relay settings for the new relays. Write-up and calculations for the relay settings will be included.
6. Revise the existing SCADA points list and controls to include the new relays being installed.
7. Assist with communication between the line relays at Substation No. 1 and No. 2.
8. Provide field assistance for the project during startup.
9. Provide construction record drawings after completion of the project.

#### **Substation No. 2**

1. Provide engineering services to install a new 161-kV line protection panel in Gardner's control building. The line relays will be a SEL 311L and SEL 421 for primary and back-up protection. The panel will replace the line protection panel in KCPL's Moonlight substation.
2. Develop a panel layout drawing for the City of Gardner to fabricate and mount the new relays.
3. Revise existing AC and DC schematics for the new relays being added.
4. Develop a new relay panel wiring diagram and revise the existing relay panel wiring diagrams.
5. Develop relay settings for the new relays. Write-up and calculations for the relay settings will be included.
6. Revise the existing SCADA points list and controls to include the new relays being installed.
7. Develop conduit layout for running cable from the 161-kV circuit breakers in KCPL's Moonlight substation to Gardner's Substation No. 2 control building for the new line panel.
8. Provide field assistance for the project during startup.
9. Provide construction record drawings after completion of the project.



## STAFFING

Mr. Ben Loehr, P.E., will be the Project Manager for this project. He will provide design as well as oversight and guidance to manage the scope, schedule, and budget for the project.

Sega proposes to use Mr. Kevin Wempe, P.E., and Mr. Scot Banes to provide relay engineering and setting support for the project. Additional support personnel will be assigned as necessary.

## SCHEDULE

This proposal is based upon a mutually-agreeable schedule.

## COMPENSATION

Sega will provide the professional services as described in the Scope of Services for an estimated not-to-exceed price of \$90,000. This includes an estimated 660 man-hours.

Sega will invoice Gardner Energy monthly for services performed the previous month based on our December 31, 2016 Rate Schedule for Professional Services (attached) and using the negotiated Agreement for Professional Services between the City of Gardner and Sega from August 25, 2015.

Thank you for reviewing our proposal. This proposal is valid for thirty (30) days. Sega is looking forward to working with you on this project. Please feel free to call if you have any questions.

Sincerely,

SEGA INC.



Ben Loehr, P.E.  
Project Manager

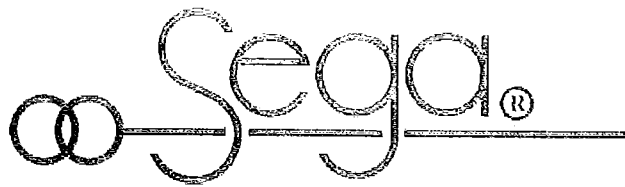
Digitally signed by Jamie Roschak  
Reason: On Behalf of the Below Author  
Date: 2016.05.04 15:40:11 -05'00'

JRC/jlr

Enc. 1

c: Jeff Arroyo, Sega  
John Clayton, Sega  
David Rodriguez, Sega





## RATE SCHEDULE FOR PROFESSIONAL SERVICES

### ENGINEERING SERVICES

---

Project Manager / Principal Engineer .....	\$ 206.00/hr.
Project Engineer / Associate Engineer .....	\$ 196.00/hr.
Senior Engineer / Senior Specialist .....	\$ 174.00/hr.
Staff Engineer / Staff Specialist .....	\$ 157.00/hr.
Engineer / Specialist .....	\$ 134.00/hr.
Assistant Engineer / Assistant Specialist .....	\$ 124.00/hr.

### TECHNICAL AND SUPPORT SERVICES

---

Senior Engineering Assistant.....	\$ 124.00/hr.
Engineering Assistant.....	\$ 103.00/hr.
Senior Drafting Technician.....	\$ 84.00/hr.
Drafting Technician .....	\$ 72.00/hr.
Engineering Secretary / Engineering Aide .....	\$ 56.00/hr.
Technical Documentation .....	\$ 46.00/hr.

### FIELD SERVICES

---

Premium applied to all above rates for long-term field assignments (includes construction management, oversight, and outage work) .....	\$ 10.00/hr.
--	--------------

### PROJECT-RELATED EXPENSES

---

1. Approved outside special consultants are billed at actual cost plus 10 percent.
2. Travel and living expenses are billed at actual cost plus 10 percent, except for personal automobile mileage that is billed according to the IRS guideline.
3. Reproduction costs such as printing, copying, and binding are billed at commercial rates.
4. Shipping charges are billed at cost.
5. Equipment, material, and subcontracted construction are billed at cost plus 10 percent.
6. Daily travel and living expenses incurred during long duration on-site work may be consolidated into a mutually agreeable per-diem charge.
7. Site office facilities and equipment are billed at actual cost plus 10 percent.

Effective through December 31, 2016

**UTILITY ADVISORY COMMISSION STAFF REPORT**

**DISCUSSION ITEM #1**

**MEETING DATE: JUNE 2, 2016**

**STAFF CONTACT: GONZ GARCIA, UTILITIES DIRECTOR**

---

**AGENDA ITEM:** Project Updates – Electric, Water, Wastewater.

---

**Background:**

Staff will discuss projects and provide current status updates at meeting.